

REVIEW

A Photographic Guide to Plants of the Tahoe Basin: Flowering Plants, Trees and Ferns.—Michael Graf. 1999. 308 pages. California Native Plant Society and University of California Press.

Graf has successfully compiled a regional botanical guide that is as close to the Platonic ideal of "guidebook" as I have encountered. I recommend a hike through the Tahoe Basin with this book in hand just to experience its lucidity, completeness and logic. To assemble a guide of this caliber requires an intense attention to detail, a knack for photography, tenacity and a love of botany.

Graf's guide is accessible to a beginning or casual botanist although they may find the phylogenetic arrangement (source not cited) of families hampering. It is a particularly good guide for the visual learner that finds the *Jepson Manual* daunting. All photos are taken in good light and are well printed. Furthermore, the photos are composed in a manner to reveal the most distinguishing characteristics of the species and its growth habit. Graf took the 367 photos included in the guide. Catching the angiosperms at peak bloom, despite an attenuated blooming period at this elevation, and compiling the photos was a monumental task.

The general characteristics of each family are explained, as are those for each photographed species. The descriptive entries of species include their height, temporal occurrence, habitat and general gross morphology. Taxonomic references are in agreement with those of the 1993 *Jepson Manual*. The less common congeners are described within the entry of the more common. Graf was careful to include very concise, yet clear, explanations of how congeners differ from one another. At the back of the book, morphological drawings from *Jepson Manual* and a brief glossary are provided to complement the species descriptions.

Professional botanists will find this guide helpful as well. In the identification of plant species, descriptions and drawings are useful and backing this up with an herbarium specimen even more so, however, most gratifying for me is finding a name attached to a photo of the species. I conduct research in the southern portion of the El Dorado National

Forest, an area that shares taxonomic overlap with the Tahoe Basin, and Graf's book was useful to confirm some of my species identifications. Graf includes taxa often overlooked due to their diminutive growth habits that can be upstaged by larger, fancier species. For example, my field site harbors Harkness linanthus (*Linanthus harknessii*), a species included in this guide. This phlox is a minor component of annual meadows and finding it requires belly botanizing of the most intense kind.

The species descriptions are preceded by a brief introduction on the Tahoe Basin that includes taxonomic organization, origins of the flora, vegetation ecology, vegetation communities and history. The overview is quite informative considering the limited amount of space dedicated to the whole of biogeography, evolutionary history and ecology of the region and Graf successfully recapitulates the plant ecology party line. Also included are details on edaphic, climatic and topographic effects on plant success in addition to intra- and interspecific interactions. This is apparently done to help explain the biogeography of the region and the patterns in the "climax" communities we see today.

Despite the decisive success of Graf's overview, introductory treatments of complicated and exciting topics in ecology are apt to exclude issues that specialists find fascinating. For example, Graf describes the traditional view of mycorrhizal-plant associations as wholly beneficial and mutualistic although a particularly hot area of research concerns the winnowing of this view. It remains to be determined the circumstances under which some of these fungi continue to be mutualistic; there may be a fine line between friend and foe. Furthermore, problems with concepts such as fungal-host specificity, fungal-mediated plant root connections and shared minerals and carbon between plants of different species and seedlings have the potential to turn plant-plant interaction studies on their heads.

The value and importance of this book cannot be overstated. Due to its thoroughness and beauty it will surely stand the test of time. It is a must have for plant enthusiasts hiking the Tahoe Basin.

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